Commonwealth of Kentucky
Division for Air Quality

PERMIT STATEMENT OF BASIS

TITLE V (DRAFT PERMIT) NO. V-99-028, REVISION 1
MARATHON ASHLAND PETROLEUM LLC (MAPLLC) MARINE REPAIR TERMINAL (MRT)
CATLETTSBURG, KY
SEPTEMBER 26, 2003
JOSHUA J. HIGGINS, REVIEWER
PLANT I.D. # 21-019-00016
APPLICATION LOG # 55009

SOURCE DESCRIPTION:

The Marathon Ashland Petroleum Marine Repair Terminal consists of:

a) Truck Unloading station (Lube Oil)
b) Truck Loading station * (Heavy Oil, Light Oil and Styrene)
c) Seven Black Fixed Roof Storage Tanks three of which are oil water separators
d) One Internal Flotation Roof Storage Tank
e) Barge Painting
f) Hot Water Barge Cargo area Cleaning and Steam Generating Thermal Oxidizer (SGTO)
g) Two Boilers: One 10.2mmBtu/hr and one 12.5mmBTU/hr
h) Various pipeline equipment: pumps, valves and flanges.
i) Barge Loading of Light Rerun and Heavy Rerun.

*- Not in operation as of the date of the last inspection.

The two boilers provide hot water for cleaning the empty barges. These boilers are fired with either natural gas or #2 fuel oil. No surfactants or additives are used in the barge cleaning process. The tanker shell clingage along with the displaced vapor was vented directly to the atmosphere, but is now vented to the SGTO. The SGTO is fired with natural gas. The contents of the barge are vacuum pumped into the various storage tanks/oil-water separators or to the truck loading rack. The truck loading rack has not operated for several years and may be demolished and removed from the site. There are also two Dissolved Air Floatation units for treatment of water before it is piped to the city sewer system.

CREDIBLE EVIDENCE:

This permit contains provisions which require that specific test methods, monitoring or recordkeeping be used as a demonstration of compliance with permit limits. On February 24, 1997, the U.S. EPA promulgated revisions to the following federal regulations: 40 CFR Part 51, Sec. 51.212; 40 CFR Part 52, Sec. 52.12; 40 CFR Part 52, Sec. 52.30; 40 CFR Part 60, Sec. 60.11 and 40 CFR Part 61, Sec. 61.12, that allow the use of credible evidence to establish compliance with applicable requirements. At the issuance of this permit, Kentucky has not incorporated these provisions in its air quality regulations.

APPLICATION COMMENTS:

I. Title V (Initial Issuance), Log # F950
II. Significant Revision, Log # 55009

I. Title V (Initial Issuance), Log # F950

COMMENTS:
All indications are that this source has been major for VOC and HAPs since before the county was redesignated attainment for ozone. Therefore all regulations that applied to major sources in non-attainment areas should have been applicable to the source. Regulations 401 KAR 59:095, New oil-effluent water separators and 401 KAR 61:045, Existing effluent oil water separators, do not apply to tanks 1 ,2 and 3 because they are not affected facilities due to the fact they do not handle any hydrocarbons with a vapor pressure of 0.5 psia or greater. The source does claim that 401 KAR 61:045 and 401 KAR 59:095 apply to the two DAF units (EP04) even though it is unclear if the vapor pressure of the hydrocarbons being handled there is 0.5 psia or greater. However, non CTG RACT applies to the barge cleaning operation since it was and is, by itself, a major source of VOC. This is addressed by the draft permit by requiring an overall capture and control efficiency of 95%. This requirement is similar to the gasoline loading MACT codified as 401 KAR 63:002 (40 CFR 60 Subpart R).

The NESHAPS 401 KAR 57:035, Subpart V (40 CFR 61.240) and 401 KAR 57:040, Subpart J *do not* apply to the pipeline equipment because this terminal does not meet the definition of a "process unit" as defined by the applicability sections of these regulations. Therefore, no leak detection and repair program is required for the pumps, flanges and valves that make up the pipeline components.

Since gasoline is not now nor is it proposed to be loaded at the existing tanker truck loading rack, Regulations 401 KAR 61:055, Existing bulk gasoline terminals and 401 KAR 61:056, Existing bulk gasoline plants, *do not* apply and no controls are required on this equipment. Also, since gasoline is not loaded onto barges. Regulation 401 KAR 63:002 (40 CFR 63 Subpart Y), National emission standards for marine tank vessel loading operations, *does not* apply.

TYPES OF CONTROLS:

Tank 4: an internal floating roof with a primary seal prescribed by **401 KAR 59:485 (40 CFR 60 Subpart Kb)**. **401 KAR 63:002 (40 CFR 63 Subpart II)** National emission standards for shipbuilding and ship repair (surface coating): MACT controls: low solvent, etc.

The draft permit contains requirements for the capture and control of VOC from the barge cleaning operation. It is the Division's opinion that Regulation 401 KAR 50:012, General application, applies to the barge cleaning process and that an overall capture and control efficiency of 95% is RACT in this specific case. It also appears that this operation alone has had the potential to emit more than 100 TPY VOC since it was constructed. This fact alone makes it subject to Kentucky's non CTG RACT provisions.

EMISSION FACTORS:

AP-42 For combustion of Fuel Oil
AP-42 Fugitive Emission Factors
AP-42 For Storage Tanks
AP-42 Emission Factors for loading tanker trucks and cleaning/loading barges

APPLICABLE REGULATIONS:

401 KAR 50:012, General application. (Barge Cleaning)
401 KAR 59:015, New indirect heat exchangers, commenced on or after April 9, 1972.
401 KAR 59:485, (40 CFR 60 Subpart Kb) Standards of performance for volatile organic liquid storage vessels for which construction, reconstruction or modification commenced after July 23, 1984.
401 KAR 59:095, New oil-effluent water separators, commenced on or after April 9, 1972.
401 KAR 61:045, Existing oil-effluent water separators, commenced before June 29, 1979.
401 KAR 63:002 (40 CFR 63 Subpart II) National emission standards for shipbuilding and ship repair (surface coating)
See comments above for an explanation of why the various regulations applicable to pipeline equipment do not apply.

EMISSION AND OPERATING CAPS DESCRIPTION:

No thinners in the paint are allowed as per the applicable MACT **401 KAR 63:002** (40 CFR 63 Subpart II).

PERIODIC MONITORING:

Semi-annual method 9 readings on the boilers are required.

Periodic gap checks etc. as required by Regulation 401 KAR 59:485 (40 CFR 60 Subpart Kb).

Periodic monitoring and/or parametric monitoring will be required on the control system that the source is required to propose for Non-CTG RACT. Once the controls have been proposed and approved, the permit will be reopened and these requirements will be added. This is the reason for the nonspecific language in the permit under EP 15 (Barge Cleaning).

OPERATIONAL FLEXIBILITY:

The permit requires Marathon Ashland to propose the specific type of capture and control device. This allows them the flexibility to choose between carbon adsorption, incineration, flaring or an equivalent system.

Attachment I.A. – Response to Comments

DRAFT TITLE V PERMIT COMMENTS AND RESPONSES:

There were no comments received from the public. However, the source made several comments that are summarized and responded to here. The comment appears in italics.

Comment I:

Page 2
Section B
(EP 01, 02, 03 – Boiler # 1, 2, 3)

General statement addressing construction or modification date of boilers should be corrected to read "Boiler # 1 and # 2 constructed 1952, Boiler # 3 constructed 1973.

Response to Comment I:

The permit has been corrected to reflect the original build dates for boilers # 1 and # 2. However, the applicable regulation identified by the source indicates that these boilers were modified after 1973 thereby making them subject to 59:015.

Comment II:

Page 3
Section B
(EP 01, 02, 03 – Boiler # 1, 2, 3)&(EP 09, 10, 11 – Tanks 5, 6, 7)
4. Special Monitoring Requirements:

Providing daily heat and sulfur content of fuel oil burned is not warranted given the batch type storage provided by Tanks 5, 6, & 7. Tanks 6 & 7 are distillate tanks and fuel supplier certification will be used to comply with monitoring requirements. Tank 5 can be filled from tanks 1, 2, or 3 at a rate meeting boiler fuel consumption. Under normal operations Tank 2 receives product from Tank 1 at intervals approaching 3 to 4 weeks (Tank 3 is a "back up" storage option). Tank 2 or 3 in return supplies Tank 5. By sampling Tank 2 (or Tank 3) after each receipt from Tank 1, Tank 5's heat and sulfur content can be confirmed without the burdensome daily sample/analysis requirement.

Response to Comment II:

The Division agrees that, in this case, daily monitoring of the amount of fuel oil burned is not necessary to demonstrate compliance with the applicable regulation (401 KAR 59:015). In response to the permittee's comment the requirement for monitoring the amount of fuel oil burned has been relaxed to a monthly basis. As originally stated in the draft, the permittee may use a fuel supplier certification to indicate heat and sulfur content.

Comment III:

Page 4
Section B
(EP 04 – Dissolved Air Floatation Units)

Review of 401 KAR 59:095 & 401 KAR 61:045, the former Ashland Petroleum Company's 1989 DAF Registration Application, and subsequent Kentucky Division for Air Quality's written "no permit required" notification, indicates the source should not be considered an "affected facility." The DAF system does not recover > than 200 gallons/day petroleum material nor does the RVP [100^{o}F] of material recovered exceed 0.5 psia. If the DAF system is not considered an "affected facility", no floating roof or its equivalent is required. NOTE: The potential to emit for EP 04-OWS is only 530 lbs/yr of VOC (an insignificant source).

Response to Comment III:

The Division agrees with the comment and the permit has been revised as requested. The letter dated September 9, 1999, containing these comments, shall serve as certification that this point is insignificant as defined by Regulation 401 KAR 50:035.

Comment IV:

Page 7
Section B
(EP 05, 06, 07 – Tank/OWS 1, 2, 3)
6. Specific Reporting Requirements:

Corrected to read: "The permittee shall demonstrate the Reid vapor pressure or True Vapor Pressure of the hydrocarbon handled by these vessels upon request of Division personnel."

NOTE: Tanks 1, 2, & 3 are listed on the DRAFT permit as both storage vessels and OWS, therefore,
the recording of RVP or TVP is dependent on the specific/applicable regulation.

Response to Comment IV:

The permittee is correct about the storage tank regulations and the OWS regulations referencing True Vapor Pressure and Reid Vapor Pressure, respectively. The permit has been corrected to reflect the differentiation between True and Reid Vapor Pressure as referenced by the aforementioned regulations.

Comment V:

Page 8
Section B
(EP 09 – Tank 5)
Description:

Corrected to read: "09 (Tank 5): 9,996 gallons (38m^3) Heavy Rerun: Black horizontal storage tank constructed 1998."

NOTE: Appears inadvertently listed as "Light Rerun" on DRAFT permit.

Response to Comment V:

The permit has been revised pursuant to the permittee's request.

Comment VI:

Page 10
Section B
(EP 08 – Tank 4)
Description:

Correction requested: Under Description "Light rerun, Maximum TVP: 6.96 psia" is listed. 401 KAR 59:485 (40 CFR 60 Subpart Kb incorporated into permit as attachment A) does not identify the maximum TVP for applicable tanks at 6.96 psia but 11.1 psia. Any description for EP 08 should reflect 11.1 psia and not 6.96 psia.

Response to Comment VI:

The listing of the True Vapor Pressure was intended to reflect information in the application that indicated this physical property was 6.96 psia. It was not intended as a limit but the Division agrees that it could be construed as such. Therefore, in response to the comment, the reference to "Maximum TVP: 6.96psia" has been deleted from the permit.

Also, 59:485 has been re-codified as 60:005.

Comment VII:

Page 12
Section B
(EP – Barge Loading)
State Origin Requirements:

Corrected to read: "The following liquids are authorized to be barge loaded."

NOTE: Listed on DRAFT as "tanker truck loaded."

Response to Comment VII:

This was an oversight by the Division and has been corrected pursuant to the comment.

Comment VIII:

Page 16
Section B
(EP 15 – Barge Cleaning)
Operating Limitations:

Review of U.S. and State EPA Regulations and discussions with several vapor control system
manufacturers indicate only Texas and Louisiana mandate vapor control on marine vessel degassing operations. Both states set emission capture and control at 90% overall efficiency.

As reported in Marathon Ashland Petroleum LLC's December 12, 1996 and December 22 & 29 Title V permit applications, emissions from degassing distillate and other low vapor pressure products are not a significant VOC or HAP source. As a reference, 40 CFR 63, Subpart Y (National Emission Standards for Marine Tank Vessel Loading Operations) only applies to gasoline, crude oil, and other products with a TVP greater than or equal to 1.5 psia at standard conditions and then only at a certain annual throughput or emission level.

Marathon Ashland Petroleum LLC suggests vapor collection and control be installed for the degassing of barges last carrying products with a TVP greater than or equal to 1.5 psia at standard conditions. Overall control efficiency should be set at 90%.

Response to Comment VIII:

The Division agrees that an overall control efficiency of 90% is sufficient to comply with Regulation 401 KAR 50:012. However, the permittee's comment that 40 CFR 63 Subpart Y does not apply to loading liquids with a vapor pressure of 1.5 psia or less is irrelevant because most liquids are loaded at ambient temperatures. In the case of barge cleaning, where heated water or steam is used to degass marine vessels, the temperature of the contents can theoretically reach as high as 212^{o}F. At this temperature the vapor pressure and corresponding emissions are higher. It is also important to take into consideration that this area has, in the past, been designated an ozone non-attainment area and that the degassing operation takes place in a river valley where dispersion of emissions can be hindered by terrain and weather conditions. It is, therefore, the opinion of the Division that controls be employed whenever any barge or other marine vessel is cleaned.

Comment IX:

Page 17
Section B
(EP 15 – Barge Cleaning)
9. Compliance Schedule:

Marine vessel degassing operations are currently addressed via the United States Coast Guard's Navigation & Vessel Inspection Circular No. 1-96: Safety Standards for the Design

Comment IX Continued:

and Operation of a Marine Vapor Control System (VCS) at Tank Barge Cleaning Facilities (discussions with several vapor control system manufacturers indicate this guideline will be published in the Federal Register within the next nine months, thereby becoming are regulation). As reference, the Coast Guard currently regulates vapor control systems installed at a marine vessel loading facilities (46 CFR Part 39). Under these regulations, a facility's vapor control system must meet their safety design standards and the design/construction/operation must be approved by a Coast Guard authorized third party Certifying Entity prior to the system's start-up. Their safety certification is in addition to the U.S. or
State EPA vapor control criteria.

The 18-month compliance schedule listed under milestone dates: does appear adequate given the relative few marine vessel degassing control units in operation (lacking a broad-based safety or operation history) in the U.S.A., the major safety concerns with vessel degassing vapor control operations/units, additional lead time required by manufacturer to build system (specialty; items not mass produced and site specific), additional design and production time required when working with a third-party Certifying Entity, site location restrictions itself [adequate space-separation of MRT activities, etc.], and start-up/shake-down period required prior to conductivity compliance demonstration.

Time Line Overview

8 months	*Design submittal period*
3 months	*U.S. & State EPA plan approval (could require much longer period)*
8 months	*Manufacture & delivery of unit and ancillary equipment*
6 months	*Site preparation and construction*
2 months	*U.S. Coast Guard and third-party certifying entity approval*
6 months	*Allowed start-up/shake-out period prior to compliance demonstration*

The second phase of the compliance milestone dates should be activated upon the approval of the "vapor control plan" by the Division and not upon issuance of the Title V permit. NOTE: The unit can not be ordered from the manufacturer until plan approved.

If the Division fails to approve the plan in a timely fashion (for "whatever" reason), the "compliance permit clock " is still ticking on Marathon Ashland Petroleum LLC. Marathon may not meet the compliance milestone through no fault of its own.

Response to Comment IX:

The Division believes that the above listed time table in unnecessarily long. It would allow almost three years to install and operate control equipment that should already be in place pursuant to Regulation 50:012. However, it was the Division's responsibility to notify the permittee that RACT is required for this source. Now that the Division has notified Marathon Ashland of these requirements, it is incumbent upon them to expeditiously install and make operational the controls.

In response to the comment, however, the Division is willing to be flexible in allowing sufficient time to get the required controls up and running. Therefore, the wording of the

Response to Comment IX Continued:

permit has been modified to allow at least two years to install and operate the control system.

In addition, the permittee makes an excellent point in the last paragraph to the above comment. Through no fault of its own, the source could experience compliance problems if the Division is delinquent in approving the design system that is proposed. In response to the comment, the Division has changed the requirement to start the clock at the time of Division approval of the control system instead of at the time of permit issuance. However, the comments about the Coast Guard and a third party Certifying Entity, are not relevant to
this permit because it is Marathon Ashland's separate responsibility to comply with those requirements and the Division believes that two years is plenty of time to design, install and operate controls of this nature.

Comment X:

Page 20
Section B
(EP 17 – Pipeline Equipment)
Description:

The fugitive emission pipeline equipment estimate (pumps, valves, flanges) provided documentation of their minimal emission impact. Suggest the pipeline equipment be listed under the insignificant activity section (no applicable regulation was cited by the Division for this source). In that the number of pumps, valves, flanges may change during a permit's term, Marathon Ashland Petroleum LLC suggests it identify the pipeline equipment for each permit renewal application.

Response to Comment X:

The Division agrees with the comment and the permit has been revised as requested. The letter dated September 9, 1999, containing these comments, shall serve as certification that this point is insignificant as defined by Regulation 401 KAR 50:035.

Comment XI:

Page 22
Section C
(Insignificant Activities)

Remove the second sentence of the paragraph. Since there are no applicable regulations identified for these activities, no monitoring should be necessary. Suggest identify these activities for each permit renewal application.

Response to Comment XI:

The Division does not see the necessity of removing the last sentence of the referenced paragraph since there are no monitoring requirements for these activities. However, it is possible that an insignificant activity listed here in the future will be subject to a monitoring requirement and the sentence will, therefore, remain.

II. Significant Revision, Log # 55009

COMMENTS:

The purpose of this significant revision is to add a control device and the associated requirements to the facility's Barge Cleaning Operations, EP 15. The control device was installed in the later half of 2001 as a requirement of the source-wide operating permit issued December 22, 1999, and was performance tested on January 11, 2002. The in-office inspection report for the source issued on August 7, 2002 by the Ashland regional office instructed the source to submit a request to have the control device and its requirements added to the permit. The information submitted did not include the standard application forms, and was logged in as an inquiry. Other than requesting DEP7007N forms for the control device, the submittal format was accepted due to the fact that it provided enough essential information to complete the review.

Summary of changes to the permit:

- This permit is being revised using the new permit template in order to update the "boiler plate language" in sections A, C, D, F, and G. As a result, one reference to paragraph **F. 5** for EP 02 and 03 was updated to reference paragraph **F. 7** on page 3.

- **Section B, EP 02 and 03, Boilers.**

Boiler #1 was deleted from this section. Its disassembly and removal from the facility was confirmed with the above mentioned inspection report. The inspection report also indicated that the two remaining boilers were changed over to natural gas as the primary fuel instead of #6 slop oil, and that #2 fuel oil remained the backup fuel. The permit was updated to reflect the primary and secondary fuel usage.

- **Section B, EP 15 Barge Cleaning.**

All limitations, requirements, and conditions associated with the addition of the SGTO and its boiler were added. All milestones under Section 9, Compliance Schedule, for this emission point were deleted because they all related to installation and testing of the SGTO. Correspondence in the Division files room indicates that all milestones were met during the course of installing the SGTO.

Type of control and efficiency:
See the section above for initial issuance, additionally, the following control device was added to the Barge Cleaning Operations (EP 15):

Type: Steam Generating Thermal Oxidizer (SGTO)
Model: SSE-2K-300-SGTO
Manufacturer: Ship and Shore Environmental
Burner/Combustion Chamber: Eclipse Ratiomatic 1500RM
Fuel: Natural Gas
Rated capacity: 14 mmBtu/hr
Date constructed: January 2002

Emission factors and their source:
See the section above for initial issuance, additionally, a combination of AP-42 emission factors, and site testing have been used to estimate emissions after application of the SGTO.

Applicable regulations:
See the section above for initial issuance, additionally, 401 KAR 59:015, New indirect heat exchangers, commenced on or after April 9, 1972, was added as an applicable regulation to EP15 in order to set emission limits on the SGTO boiler.

EMISSION AND OPERATING CAPS DESCRIPTION:
See the section above for initial issuance, additionally:
Emission Limitations. Pursuant to Regulation 401 KAR 50:012, General application, emissions from the barge cleaning operations shall be captured and controlled. The overall reduction efficiency for VOCs shall be at least 90% (See Comment VIII and the Division's response, above). Additionally, limits on particulate and SO_2 emissions from the SGTO boiler were set at 0.412 lb/mmBtu and 1.758 lbs/mmBtu, respectively, based on a three-hour average.

Operating Limitations. Emissions from the Barge Cleaning operations shall be vented to the SGTO at all times. The average combustion temperature of the SGTO in any three (3) hour period must not fall below the combustion temperature limit established during the most recent performance test.

PERIODIC MONITORING:
See the section above for initial issuance. Additionally, the permittee shall continuously monitor the combustion chamber temperature of the SGTO while it is in operation.